a plurality of first level interconnects directly contacting each of said collector, base, emitter and device electrodes; and

a plurality of coplanar second level interconnects, perpendicular to and directly contacting said plural first level interconnects,

wherein said electrode contact layer and said resistive layer are the same material.--

R E M A R K S

The specification has been amended to make editorial changes to place the application in condition for allowance at the time of the next Official Action.

Claims 1-47 and 52 were previously pending in the application. Claims 19-41, 43, 44, 46 and 52 are cancelled and new claim 53 is added. Therefore, claims 1-18, 45, 47 and 53 are presented for consideration.

Claims 1-47 and 52 are rejected as being anticipated by PRASAD et al. 5,268,315.

Reconsideration and withdrawal of the rejection are respectfully requested because the reference does not disclose or suggest at least one passive device electrode having two resistive element electrode contacts and at least one resistive element layer contacting the two resistive element electrode contacts as recited in claim 1 of the present application.

By way of example, Figure 1 of the present application shows at least one passive device electrode, resistive element 200, having two resistive element electrode contacts 26 and at least one resistive element layer 24 contacting the two resistive element electrode contacts.

As noted in the Official Action, PRASAD et al. teach passive device NiCr resistor 76. Column 6, lines 31-39 of PRASAD et al., for example referring to Figure 7 disclose that resistor contacts 78A, 78B are formed across the resistor 76, in order to make high quality, stable electrical contacts to the NiCr resistor metal. Accordingly, the resistor contact element 78A and 78B of PRASAD et al. each contact one contact of NiCr resistor 76. PRASAD et al. do not disclose or suggest that at least one resistive element layer contacts the two resistive element electrode contacts as recited in claim 1 of the present application.

The Official Action offers element 86 as the electrode contact layer but does not offer a reference number for the resistive layer. The Official Action further states that silicon nitride is known as a compound semiconductor layer. Accordingly, the resistive layer of PRASAD et al. as noted in the Official Action could be element 84 or element 90, since these are both silicon nitride. In any event, column 6, lines 62-64, of PRASAD et al., for example, disclose that interconnect 86 is a TiPdAu layer. A TiPdAu layer is not the same compound semiconductor

material as silicon nitride. Accordingly, further clarification of the elements of PRASAD et al. that read on the recited electrode contact layer and the at least one resistive element layer that comprise the same semiconductor layer of claim 1 is respectfully requested.

Claims 2-18 depend claim 1 and further define the invention. For the reasons set forth above regarding claim 1, claims 2-18 are also believed patentable over the cited prior art.

Claim 42 recites a metal-insulator-metal capacitor having a bottom electrode, a capacitive dielectric layer and a top electrode. One of the bottom and top electrodes and one of a collector, base and emitter electrode comprise a same metal layer and have a same thickness.

By way of example, Figure 1 shows a MIM capacitor 300 having a bottom electrode 23 and a hetero-junction bi-polar transistor 100 having a collector 22. The collector 22 and the bottom electrode 23 are of the same metal layer. As noted on page 28 lines 3-6, for example, the collector electrode 22 and the bottom electrode 23 are concurrently formed in the same process. One having ordinary skill in the art would understand that electrodes formed in the same process would have the same thickness as seen in Figure 1.

As disclosed on column 6, lines 62-68, of PRASAD et al., for example, the first metal interconnects 86 are a TiPdAu

layer deposited and selectively lifted off. In addition to being a primary interconnect layer this layer is used to form the bottom electrode 88 of MIM capacitors. As noted on page 3 of the Official Action element 86 represents the collector, base and emitter electrodes. Therefore, the Examiner is correct that element 86 and the bottom electrode 88 are out of the same TiPdAu layer, however, as readily seen in Figure 15 of PRASAD et al. for example, these elements do not have the same thickness. Although drawings cannot be used to show scale, one having ordinary skill would understand that the TiPdAu layer fills the via and overlies silicon nitride layer 84 to form interconnect 86 and only overlies element 84 to form bottom electrode layer 88. Accordingly, these two elements would necessarily have different thicknesses.

Claim 47 recites a resistive element electrode, a top electrode of a metal-insulator-metal capacitor and at least one of collector, base and emitter electrodes comprise a same metal layer having a same thickness.

By way of example, Figure 4 of the present application shows resistive element electrode 26, top electrode 27 and collector electrode 22 formed of the same metal. As disclosed on page 36, lines 13-18 of the present application, for example, collector electrodes 22, resistive element electrodes 26 and top electrode 27 are concurrently formed. One having ordinary skill in the art would understand that electrode elements concurrently

formed would have the same thickness as embodied in Figure 4 of the present application.

The comments above regarding claim 42 are equally applicable to claim 47.

New claim 53 recites a plurality of first level interconnects directly contacting each of collector, base, emitter and device electrodes and a plurality of co-planar second level interconnects perpendicular to and directly contacting the plural first level interconnects as seen in Figure 1 of the present application, for example.

PRASAD et al. at column 7, lines 29-37, for example, disclose a metal air bridge 100, 102 as a possible second level interconnect. However, PRASAD et al. do not disclose or suggest a plurality of first level interconnects directly contacting each of collector, base, emitter and device electrodes and a pluralities of co-planar second level interconnects perpendicular to and directly contacting the first level interconnects as recited in new claim 53.

Accordingly, it is believed that the new claims avoids the rejection under §102 and is allowable over the art of record.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

Attached hereto is a marked-up version of the changes made to the abstract, specification and claims. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted,

YOUNG & THOMPSON

By 

Liam McDowell
Attorney for Applicant
Registration No. 44,231
745 South 23rd Street
Arlington, VA 22202
Telephone: 703/521-2297

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ABSTRACT OF THE DISCLOSURE

A monolithically integrated semiconductor device includes a hetero-junction bipolar transistor having at least one electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes. The device also includes at least one passive device having at least one passive device electrode and at least one resistive layer. The electrode contact layer and the resistive layer are the same compound semiconductor layer.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Page 2, the paragraph beginning on line 5 has been replaced as follows:

--Japanese laid-open patent publication No. 10-107042 discloses a conventional monolithic microwave integrated circuit. Such a conventional integrated circuit has the following problems. The hetero-junction bipolar transistor and the metal insulator metal capacitor are separately formed using separate sets of masks. This means that the total number of the necessary masks and fabrication processes are large. [Different three] Three different metals are used for emitter, base and collector of the hetero-junction bipolar transistor. This makes the fabrication processes complicated. It is desired to avoid any further increase in the number of the fabrication processes.--

Page 3, the paragraph beginning on line 20, bridging page 21, has been replaced as follows:

--A primary aspect of the present invention is a monolithically integrated semiconductor device comprising[]: a hetero-junction bipolar transistor having at least an electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; and at least a passive device having at least a passive device electrode and at least a resistive layer, wherein the electrode contact layer and the resistive layer comprise the same compound semiconductor layer,

and the electrode contact layer and the resistive layer are concurrently formed in the same processes. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 5, the paragraph beginning on line 12 has been replaced as follows:

--A first aspect of the present invention is a monolithically integrated semiconductor device comprising[]: a hetero-junction bipolar transistor having at least an electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; and at least a passive device having at least a passive device electrode and at least a resistive layer, wherein the electrode contact layer and the resistive layer comprise the same compound semiconductor layer. The electrode contact layer and the resistive layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 6, the paragraph beginning on line 3 has been replaced as follows:

--It is also possible that the at least one passive device further comprises[]: a resistive element which comprises[]: at least a resistive element layer[]; and at least a resistive element electrode[]; and a metal-insulator-metal capacitor which comprises[]: a bottom electrode[]; a capacitive dielectric layer[]; and a top electrode. It is further possible

that the at least electrode contact layer comprises a base electrode contact layer which contacts directly with the base electrode. It is further more possible that the base electrode contact layer, the resistive element layer and the capacitive dielectric layer comprise the same compound semiconductor layer. The base electrode contact layer, the resistive element layer and the capacitive dielectric layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 6, the paragraph beginning on line 16 has been replaced as follows:

--It is moreover possible that the base electrode and the bottom electrode comprise the same metal layer. The base electrode and the bottom electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 6, the paragraph beginning on line 20 has been replaced as follows:

--It is also possible that the base electrode and the top electrode comprise the same metal layer. The base electrode and the top electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 6, the paragraph beginning on line 24, bridging page 7, has been replaced as follows:

--It is also possible that the base electrode and the resistive element electrodes comprise the same metal layer. The base electrode and the resistive element electrodes are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 7, the paragraph beginning on line 5 has been replaced as follows:

--It is possible that the at least one electrode contact layer comprises a collector electrode contact layer which contacts directly with the collector electrode. It is further possible that the collector electrode contact layer, the resistive element layer and the capacitive dielectric layer comprise the same compound semiconductor layer. The collector electrode contact layer, the resistive element layer and the capacitive dielectric layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 7, the paragraph beginning on line 13 has been replaced as follows:

--It is further more possible that the collector electrode and the bottom electrode comprise the same metal layer. The collector electrode and the bottom electrode are concurrently

formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 7, the paragraph beginning on line 18 has been replaced as follows:

--It is possible that the collector electrode and the top electrode comprise the same metal layer. The collector electrode and the top electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 7, the paragraph beginning on line 22, bridging page 8, has been replaced as follows:

--It is also possible that the collector electrode and the resistive element electrodes comprise the same metal layer. The collector electrode and the resistive element electrodes are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 8, the paragraph beginning on line 3 has been replaced as follows:

--It is also possible to that the at least one electrode contact layer comprises an emitter electrode contact layer which contacts directly with the emitter electrode. It is further more possible that the emitter electrode contact layer, the resistive element layer and the capacitive dielectric layer comprise the same compound semiconductor layer. The emitter

electrode contact layer, the resistive element layer and the capacitive dielectric layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 8, the paragraph beginning on line 11 has been replaced as follows:

--It is further more possible that the emitter electrode and the bottom electrode comprise the same metal layer. The emitter electrode and the bottom electrode comprise the same metal layer. The emitter electrode and the bottom electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 8, the paragraph beginning on line 16 has been replaced as follows:

--It is also possible that the emitter electrode and the top electrode comprise the same metal layer. The emitter electrode and the top electrode and the resistive element electrodes are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 8, the paragraph beginning on line 20 has been replaced as follows:

--It is also possible that the emitter electrode and the resistive element electrodes comprise the same metal layer.

The emitter electrode and the resistive element electrodes are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 9, the paragraph beginning on line 1 has been replaced as follows:

--It is also possible that the at least passive device further comprises[ ]: a resistive element which comprises[]: at least a resistive element layer[]; and at least a resistive element electrode. It is further more possible that the at least electrode contact layer comprises a base electrode contact layer which contacts directly with the base electrode. It is moreover possible that the base electrode contact layer and the resistive element layer comprise the same compound semiconductor layer. The base electrode contact layer and the resistive element layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 9, the paragraph beginning on line 11 has been replaced as follows:

--It is still more possible that the base electrode and the resistive element electrodes comprise the same metal layer. The base electrode and the resistive element electrodes are concurrently formed in the same [processes] process. This reduces

the number of the fabrication processes and the manufacturing cost.--

Page 9, the paragraph beginning on line 16 has been replaced as follows:

--It is also possible that the at least electrode contact layer comprises a collector electrode contact layer which contacts directly with the collector electrode. It is further possible that the collector electrode contact layer and the resistive element layer comprise the same compound semiconductor layer. The collector electrode contact layer and the resistive element layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 9, the paragraph beginning on line 23, bridging page 10, has been replaced as follows:

--It is further more possible that the collector electrode and the resistive element electrodes comprise the same metal layer. The collector electrode and the resistive element electrodes are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 10, the paragraph beginning on line 4 has been replaced as follows:

--It is also possible that the at least electrode contact layer comprises an emitter electrode contact layer which

contacts directly with the emitter electrode. It is further more possible that the emitter electrode contact layer and the resistive element layer comprise the same compound semiconductor layer. The emitter electrode contact layer and the resistive element layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 10, the paragraph beginning on line 11 has been replaced as follows:

--It is also possible that the emitter electrode and the resistive element electrodes comprise the same metal layer. The emitter electrode and the resistive element electrodes are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 10, the paragraph beginning on line 16 has been replaced as follows:

--It is also possible that the at least passive device further comprises[]: a metal-insulator-metal capacitor which comprises[]: a bottom electrode[]; a capacitive dielectric layer[]; and a top electrode.--

Page 10, the paragraph beginning on line 24, bridging page 11, has been replaced as follows:

--It is moreover possible that the base electrode and the bottom electrode comprise the same metal layer. The base

electrode and the bottom electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 11, the paragraph beginning on line 4 has been replaced as follows:

--It is also possible that the base electrode and the top electrode comprise the same metal layer. The base electrode and the top electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 11, the paragraph beginning on line 8 has been replaced as follows:

--It is also possible that the at least electrode contact layer comprises a collector electrode contact layer which contacts directly with the collector electrode. It is further more possible that the collector electrode contact layer and the capacitive dielectric layer comprise the same compound semiconductor layer. The collector electrode contact layer and the capacitive dielectric layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 11, the paragraph beginning on line 16 has been replaced as follows:

--It is still more possible that the collector electrode and the bottom electrode comprise the same metal layer.

The collector electrode and the bottom electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 11, the paragraph beginning on line 21 has been replaced as follows:

--It is also possible that the collector electrode and the top electrode comprise the same metal layer. The collector electrode and the top electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 12, the paragraph beginning on line 1 has been replaced as follows:

--It is also possible that the at least electrode contact layer comprises an emitter electrode contact layer which contacts directly with the emitter electrode. It is further possible that the emitter electrode contact layer and the capacitive dielectric layer comprise the same compound semiconductor layer. The emitter electrode contact layer and the capacitive dielectric layer are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 12, the paragraph beginning on line 8 has been replaced as follows:

--It is further more possible that the emitter electrode and the bottom electrode comprise the same metal layer.

The emitter electrode and the bottom electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 12, the paragraph beginning on line 13 has been replaced as follows:

--It is also possible that the emitter electrode and the top electrode comprise the same metal layer. The emitter electrode and the top electrode are concurrently formed in the same [processes] process. This reduces the number of the fabrication processes and the manufacturing cost.--

Page 12, the paragraph beginning on line 17 has been replaced as follows:

--A second aspect of the present invention is a monolithically integrated semiconductor device comprising[]: a hetero-junction bipolar transistor having at least an electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; and at least a passive device having at least a passive device electrode and at least a resistive layer, wherein the passive device electrode and one of the collector, base and emitter electrodes comprises the same metal layer.--

Page 13, the paragraph beginning on line 3 has been replaced as follows:

--It is also possible that the electrode contact layer and the resistive layer comprise the same compound semiconductor

layer. It is further possible that the at least passive device further comprises[]: a resistive element which comprises[]: at least a resistive element layer[]; and at least a resistive element electrode[]; and a metal-insulator-metal capacitor which comprises[]: a bottom electrode[]; a capacitive dielectric layer[]; and a top electrode.—

Page 13, the paragraph beginning on line 10 has been replaced as follows:

--It is also possible that the at least passive device further comprises[]: a resistive element which comprises[]: at least a resistive element layer[]; and at least a resistive element electrode.--

Page 13, the paragraph beginning on line 13 has been replaced as follows:

--It is also possible that the at least passive device further comprises[]: a metal-insulator-metal capacitor which comprises[]: a bottom electrode[]; a capacitive dielectric layer[]; and a top electrode.--

Page 13, the paragraph beginning on line 16, bridging page 14, has been replaced as follows:

--A third aspect of the present invention is a monolithically integrated semiconductor device comprising[]: a hetero-junction bipolar transistor having at least an electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; a resistive element

which comprises[]: at least a resistive element layer[]; and at least a resistive element electrode[]; and a metal-insulator-metal capacitor which comprises[]: a bottom electrode[]; a capacitive dielectric layer[]; and a top electrode, wherein the electrode contact layer, the resistive element layer and the capacitive dielectric layer comprise the same compound semiconductor layer, and wherein the resistive element electrode, the top electrode and the at least one of collector, base and emitter electrodes comprises the same metal layer.—

Page 14, the paragraph beginning on line 7 has been replaced as follows:

--A fourth aspect of the present invention is a method of forming a monolithically integrated semiconductor device comprising[]: a hetero-junction bipolar transistor having at least an electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; and at least a passive device having at least a passive device electrode and at least a resistive layer, wherein the electrode contact layer and the resistive layer are formed concurrently in the same processes.--

Page 14, the paragraph beginning on line 16 has been replaced as follows:

--It is also possible that the passive device electrode and one of the collector, base and emitter electrodes are formed concurrently in the same [processes] process.--

Page 14, the paragraph beginning on line 23, bridging page 15, has been replaced as follows:

--A fifth aspect of the present invention is a method of forming a monolithically integrated semiconductor device comprising[]: a hetero-junction bipolar transistor having at least an electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; and at least a passive device having at least a passive device electrode and at least a resistive layer, wherein the passive device electrode and one of the collector, base and emitter electrodes are formed concurrently in the same processes.--

Page 15, the paragraph beginning on line 10 has been replaced as follows:

--It is also possible that the electrode contact layer and the resistive layer are formed concurrently in the same [processes] process.--

Page 15, the paragraph beginning on line 12 has been replaced as follows:

--A sixth aspect of the present invention is a monolithically integrated semiconductor device comprising[]: a hetero-junction bipolar transistor having at least an electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; a resistive element which comprises[]: at least a resistive element layer[]; and at least a resistive element electrode[]; and a metal-insulator-

metal capacitor which comprises[]: a bottom electrode[]; a capacitive dielectric layer[]; and a top electrode, wherein the electrode contact layer, the resistive element layer and the capacitive dielectric layer are formed concurrently in the same processes, and wherein the resistive element electrode, the top electrode and the at least one of collector, base and emitter electrodes are formed concurrently in the same [processes] process.--

Page 16, the paragraph beginning on line 7 has been replaced as follows:

--A first embodiment according to the present invention will be described in detail with reference to the drawings. FIG. 1 is a fragmentary cross sectional elevation view of a monolithic microwave integrated circuit in a first embodiment in accordance with the present invention. A monolithic microwave integrated circuit is provided on a semi-insulating GaAs substrate 10. The monolithic microwave integrated circuit has a monolithic integration of a hetero-junction bipolar transistor 100, a [restive] resistive element 200 and a metal-insulator-metal capacitor 300.--

Page 16, the paragraph beginning on line 15 has been replaced as follows:

--The hetero-junction bipolar transistor 100 has an emitter electrode 20, a base electrode 21, and a collector electrode 22. The restive element 200 has a p+-GaAs resistive

layer 24 and resistive element electrodes 26. The metal-insulating-metal capacitor 300 has a bottom electrode 23, a p+-GaAs polycrystalline layer 25, and a top electrode 27, wherein the p+-GaAs polycrystalline layer 25 is sandwiched between the top and bottom electrodes 27 and 23, so that the p+-GaAs polycrystalline layer 25 serves as a dielectric, which is a medium capable of maintaining an electric field with no supply of energy from outside source.--

Page 25, the paragraph beginning on line 3 has been replaced as follows:

--The base electrodes 21 [overly] overlie the p+-GaAs base electrode contact layers 18 with a reduced contact resistance, which reduces a parasitic capacitance. The reduced parasitic capacitance improves high frequency performance of the hetero-junction bipolar transistor.--

Page 28, the paragraph beginning on line 21 has been replaced as follows:

--The base electrodes 21 [overly] overlie the p+-GaAs base electrode contact layers 18 with a reduced contact resistance, which reduces a parasitic capacitance. The reduced parasitic capacitance improves high frequency performance of the hetero-junction bipolar transistor.--

Page 38, the paragraph beginning on line 9 has been replaced as follows:

--It is possible as a modification to change the compound of the semiconductors. The monolithic microwave integrated circuit is formed over an InP substrate 10. The hetero-junction bipolar transistor 100 has the emitter electrode 20, the base electrode 21, and the collector electrode 22. The [restive] resistive element 200 has a p+-InGaAs resistive layer 24 and resistive element electrodes 26. The metal-insulating-metal capacitor 300 has a bottom electrode 23, an n+-InGaAs polycrystalline layer 25, and a top electrode 27, wherein the n+-InGaAs polycrystalline layer 25 is sandwiched between the top and bottom electrodes 27 and 23, so that the n+-InGaAs polycrystalline layer 25 serves as a dielectric, which is a medium capable of maintaining an electric field with no supply of energy from outside source.--

Page 38, the paragraph beginning on line 21, bridging page 39, has been replaced as follows:

--An inter-layer insulator 28 of silicon dioxide entirely overlies the substrate, so that the hetero-junction bipolar transistor 100, the [restive] resistive element 200 and the metal-insulator-metal capacitor 300 are buried in the inter-layer insulator 28. The emitter electrode 20, the base electrode 21, and the collector electrode 22, and the resistive element electrodes 26 as well as the top electrode 27 are electrically

connected through contact electrode contacts to second level interconnections 29. The contact electrode contacts are provided in contact holes formed in the inter-layer insulator 28. The second level interconnections 29 extend over the inter-layer insulator 28. The inter-layer insulator 28 has a planarized top surface.--

IN THE CLAIMS:

Claim 1 has been amended as follows:

--1. (amended) A monolithically integrated semiconductor device comprising[]:

a hetero-junction bipolar transistor having at least [an] one electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; and

at least [a] one passive device having at least [a] one passive device electrode having two [and at least a] resistive elemental electrode contacts and at least one resistive element layer, contacting said two resistive element electrode contacts,

wherein said electrode contact layer and said resistive element layer comprise the same compound semiconductor layer.--

Claim 3 has been amended as follows:

--3. (amended) The device as claimed in claim 1, wherein said at least one passive device further comprises[:] [a resistive element which comprises : at least a resistive element layer ; and at least a resistive element electrode ; and]

a metal-insulator-metal capacitor which comprises[:] a bottom electrode[;], a capacitive dielectric layer[;] and a top electrode.--

Claim 42 has been amended as follows:

--42. (amended) A monolithically integrated semiconductor device comprising[ ]:

a hetero-junction bipolar transistor having at least [an] one electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[]; and

at least [a] one passive device comprising a metal-insulator-metal capacitor having a bottom electrode, a capacitive dielectric layer and a top electrode [having at least a passive device electrode and at least a resistive layer],

wherein [said passive device electrode and] one of said bottom and top electrodes and one of said collector, base and emitter electrodes [comprises] comprise the same metal layer and have a same thickness.--

Claim 45 has been amended as follows:

--45. (amended) The device as claimed in claim [43] 42, wherein said at least passive device further comprises[ ]:

a resistive element which comprises[ ]: at least a resistive element layer[ ]; and at least a resistive element electrode.--

Claim 47 has been amended as follows:

--47. (amended) A monolithically integrated semiconductor device comprising[ ]:

a hetero-junction bipolar transistor having at least [an] one electrode contact layer which contacts directly with at least one of collector, base and emitter electrodes[ ];

a resistive element which comprises[:] at least a resistive element layer[;], and at least [a] one resistive element electrode[ ]; and

a metal-insulator-metal capacitor which comprises[:] a bottom electrode[;], a capacitive dielectric layer[;], and a top electrode,

wherein said electrode contact layer, said resistive element layer and said capacitive dielectric layer comprise the same compound semiconductor layer, and

wherein said resistive element electrode, said top electrode and said at least one of collector, base and emitter electrodes comprises the same metal layer having a same thickness.--

The **Abstract** has been amended as follows:

ABSTRACT OF THE DISCLOSURE

A monolithically integrated semiconductor device [comprises :] includes a hetero-junction bipolar transistor having at least [an] one electrode contact layer which contacts directly with at least one of collector, base and emitter

electrodes. [; and] The device also includes at least [a] one passive device having at least [a] one passive device electrode and at least [a] one resistive layer[, wherein the]. The electrode contact layer and the resistive layer [comprise] are the same compound semiconductor layer.